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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,801	06/04/2001	Terrence G. Vargo	013.00061	2865

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EXAMINER

YAO, SAM CHAUN CUA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 03/06/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,801

Applicant(s)

VARGO ET AL.

Examiner

Sam Chuan C. Yao

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 8, 10, 13-14 and 17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Olson (US 4,352,142).

For claim 14, the recited second polymeric sheet reads on adhesive 22 disposed on a di-electric sheet 24 taught by Olson.

3. Claims 1-5, 8, 10, 14-15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Westre (US 5,866,272).

Westre et al discloses a process of making a titanium-polymer hybrid for aircraft, the hybrid is resistant to lighting strikes, the process comprises providing a 1st resin impregnated fiber-reinforced ply (14; taken to inherently include a non-metallic surface); disposing a titanium alloy foil (10) over the 1st ply; disposing a 2nd resin impregnated fiber-reinforced ply (12; taken to be the recited 1st polymeric sheet) over the titanium foil; disposing another titanium alloy foil over the 2nd ply; and disposing a 3rd fiber-reinforced ply over the another titanium foil (14; taken to be the 2nd polymeric sheet) (col. 2 lines 1-6; col. 3 lines 38-55; col. 7 lines 4-28; figure 1). It is further taken that, a polymeric fabric recited in claim 5 reads on a 2nd resin impregnated fiber-reinforced ply shown in figure 1).

Art Unit: 1733

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US 4,352,142) as applied to claim 1 above.

It would have been obvious in the art to use a fiber mat (i.e. fabric) which is impregnated with a fluoropolymeric resin, because it is well known in the art to use a fluoropolymer impregnated fibrous mat as a di-electric layer to a multi-layer composite having an electromagnetic shielding property. Moreover, it is also conventional in the art to use either a metal screen (i.e. mesh) or expanded metal foil in making a multi-layer composite for an aircraft, the composite has a lightning resistant property.

6. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US 4,352,142) as applied to claim 10 above, and further in view of Prohaska et al (US 4,933,060), Gardella, Jr. et al (abstract) and/or Vargo et al (US 5,696,207).

It would have been obvious in the art, motivated by the desire to enhance a fluoropolymer di-electric bonding to a metallic material, to perform the recited process steps in these claims in making the composite hybrid of Olson as such is notoriously well known in the art as exemplified in the teachings of Prohaska et al

Art Unit: 1733

(col. 3 line 9 to col. 4 line 14), Vargo et al (col. 5 line 6 to col. 6 line 65), and/or Gardella, Jr. et al (abstract).

7. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olson (US 4,352,142) as applied to claim 1 above, and further in view of WO 99/64235.

Note: claim 14 was taken to be anticipated by Olson in numbered paragraph 3. A rejection to claim 14 is made here in the event that, a 2nd polymeric sheet defines over adhesive (22) shown in figure 2 of Olson.

It would have been obvious in the art, making a composite hybrid, the hybrid having an aluminum covering layer (20), to apply an appliqué to the composite hybrid such as the one taught by WO '235, because WO '742 teaches applying an appliqué having a fluoropolymer backing onto an aluminum surface of an aircraft to provide decorative features and protection to the aircraft (abstract; page 1 full paragraph 1; page 3 lines 24-30).

8. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Westre et al (US 5,866,272) in view of Gilwee, Jr. et al (US 4,061,812).

Note: several of the recited claims were taken to be anticipated by Westre et al by taking fiber-reinforced ply 14 as inherently having the recited non-metallic surface. This is alternative rejection, where the focus will be on a honeycomb core shown in figure 1A.

With respect to claims 1-5, 8, 10, 14-15 and 17, Westre et al discloses a process of making a composite structure for aircraft, the structure is resistant to lightning strikes, the process comprises providing a pair of titanium-polymer hybrids onto

Art Unit: 1733

opposing surfaces of a honeycomb core; wherein each hybrid includes a 1st titanium alloy foil (10), 1st resin-impregnated fiber-reinforced ply (14) disposed onto the 1st titanium alloy foil; a 2nd titanium alloy foil (10) disposed over the 1st ply; a 2nd resin-impregnated fiber-reinforced ply (12) disposed over the 2nd titanium foil; a 3rd titanium alloy foil (10) disposed over the 2nd ply; and a 3rd resin-impregnated fiber-reinforced ply disposed over the 3rd titanium alloy foil (10) (col. 2 lines 1-6; col. 3 lines 38-55; col. 7 lines 4-28; figure 1).

Westre et al does expressly not teach using a non-metallic honeycomb core.

However, it would have been obvious in the art to use a non-metallic honeycomb core in making a composite structure taught by Westre et al, because: a) Westre is not restrictive to using a particular material in making a honeycomb core (col. 7 lines 29-31); and, b) it is a notoriously common practice in the art to form an aircraft composite structure comprising a non-metallic honeycomb core as exemplified in the teachings of Gilwee, Jr. et al.

With respect to claims 6-7 and 10-12, since it is conventional in the art to form an aircraft composite structure having a fluoropolymer impregnated reinforcing fibers, claims 6-7 would have been obvious in the art. In addition, since it is a common practice in the art to use an adhesive to facilitate a bonding of a highly inert fluoropolymer to a metallic material, claim 10 would have been obvious in the art. Lastly, since it is conventional in the art to perform the recited process steps in claims 11-12 so that a fluoropolymer effectively bonds onto a metallic material, claims 11-12 would have been obvious in the art.

Art Unit: 1733

With respect to claim 9, it is also conventional in the art to provide a metal screen or an expanded metal foil layer in forming an aircraft lightning protected composite.

Election/Restrictions

9. Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. Claims 1-17, drawn to a method of reducing damage resulting from "E³" on a non-metallic surface, classified in class 156, subclass 324.
 - II. Claims 18-44, drawn to an object/laminate, classified in class 428, subclass 545.

The inventions are distinct, each from the other because of the following reasons:

10. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the process as claimed can be used to make other and materially different product such as disposing a nylon polymeric sheet (i.e. a non-halopolymer) over a metal sheet.

11. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

12. During a telephone conversation with Mr. Peter Regalski on 02-03-03 a provisional election was made with traverse to prosecute the invention of Group I,

Art Unit: 1733

claims 1-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-44 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

13. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cedarleaf (US 5,370,921) is cited as a reference of interest showing a lightning strike composite, the composite comprises a metal screen or expanded metal foil layer (col. 5 line 47 to col. 6 line 36).


Bannink, Jr. et al (US 4,912,594) is cited showing another multi-layered composite having a lightning strike protection characteristic (abstract; figures 1-2).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (703) 308-4788. The examiner can normally be reached on Monday-Friday with second Friday off.

Art Unit: 1733

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7115 for regular communications and (703) 305-7718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

scy
March 4, 2003